Invariants of linear parabolic differential equations

N.H. Ibragimov [a], S.V. Meleshko [b,*], E. Thailert [b]

[a] *Research Centre ALGA: Advances in Lie Group Analysis, Department of Mathematics and Science, Blekinge Institute of Technology, SE-371 79 Karlskrona, Sweden*

[b] *School of Mathematics, Institute of Science, Suranaree University of Technology, 111 Unuversity Avenue, Nakhon Ratchasima 30000, Thailand*

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Abstract

The paper is dedicated to construction of invariants for the parabolic equation

$$u_t + a(t,x)u_{xx} + b(t,x)u_x + c(t,x)u = 0.$$

We consider the equivalence group given by point transformations and find all invariants up to seventh-order, i.e. the invariants involving the derivatives up to seventh-order of the coefficients a, b and c with respect to the independent variables t, x.

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